

# CBCS SCHEME

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18AE/AS651

Sixth Semester B.E. Degree Examination, Dec.2023/Jan.2024

## History of Flight and Technology Forecast

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Discuss the early efforts of flying. (10 Marks)
- b. Elaborate the contributions of "Leonardo Da Vinci's" in the Ornithopters development. (10 Marks)

OR

- 2 a. Discuss the efforts of "George Caley" the glider man. (10 Marks)
- b. Discuss the contributions of Lilienthal and Percy Pilcher. (10 Marks)

### Module-2

- 3 a. Explain why the credit of first practical flight goes to "Wright Brothers". (10 Marks)
- b. Discuss why Sir George Cayley is called true inventor of an aircraft. (10 Marks)

OR

- 4 a. Discuss the developments of aviation after 1903 to till date in brief. (10 Marks)
- b. Write a note on the following mentioning merits and demerits:  
i) Mono plane    ii) Bi-plane    iii) Multiplane (10 Marks)

### Module-3

- 5 a. Illustrate an Aircraft with its essential parts and structural components. (10 Marks)
- b. Classify the aircrafts with all the possible considerations. (10 Marks)

OR

- 6 a. Explain the conventional control system of an airplane and explain functions of each control surface. (10 Marks)
- b. Explain the cockpit instrumentation of an airplane with neat diagram. (10 Marks)

### Module-4

- 7 a. Discuss the Monocoque and Semi-monocoque constructions of an aircraft. (10 Marks)
- b. Suggest the material for the construction of wing and fuselage of an aircraft with proper justification. (10 Marks)

OR

- 8 a. Explain the use of composite materials in the constructions of aircraft from the past. (10 Marks)
- b. Draw stress strain diagram for Mild Steel and explain salient features. (10 Marks)

### Module-5

- 9 a. Illustrate the turbo-fan engine with the explanation of working. (10 Marks)
- b. Classify the propulsion system based on the applications. (10 Marks)

OR

- 10 a. Illustrate Rocket with neat diagram and explain its various functional components. (10 Marks)
- b. Differentiate between the Liquid propellant, Solid propellant and Hybrid propellant Rockets. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.